

Shuzhong Zhang). 15. Nonlinear programming on networks with discrete-continuous variables (L.A. Ostromuhov). 16. Algorithms guaranteeing iterative points within nonnegative orthant in complementarity problems (Hou-Duo Qi). 17. Globally convergent interior path following methods for nonlinear programming and Brouwer fixed point problems (Bo Yu and Guo-chen Feng). 18. A further study on a penalty function of Bertsekas (Liwei Zhang and Huanwen Tang).

Logics for Databases and Information Systems. Edited by Jan Chomicki and Gunter Saake. Kluwer Academic Publishers, Boston, MA. (1998). 430 pages. \$79.95, NLG 175.00, GBP 53.00.

Contents:

List of contributors. 1. Introduction to logics for databases and information systems (Jan Chomicki and Gunter Saake). 2. A logic primer (Stefan Conrad). 3. Temporal logic in information systems (Jan Chomicki and David Toman). 4. The role of deontic logic in the specification of information systems (J.-J.Ch. Meyer, R.J. Wieringa and F.P.M. Dignum). 5. A logic for programming database transactions (Anthony J. Bonner and Michael Kifer). 6. Logics for specifying concurrent information systems (Hans-Dieter Ehrich, Carlos Caleiro, Amílcar Sernadas and Grit Denker). 7. Evolving logical specification in information systems (Stefan Conrad, Jaime Ramos, Gunter Saake and Cristina Sernadas). 8. Description logics for conceptual data modeling (Diego Calvanese, Maurizio Lenzerini and Daniele Nardi). 9. Integrity constraints: Semantics and applications (Parke Godfrey, John Grant, Jarek Gryz and Jack Minker). 10. Logical approaches to incomplete information: A survey (Ron van der Meyden). 11. Declarative frameworks for inheritance (Laks V.S. Lakshmanan and Krishnaprasad Thirunarayan). 12. On logical foundations of active databases (Georg Lausen, Bertram Ludäscher and Wolfgang May). Index.

Advances in Robot Kinematics: Analysis and Control. Edited by Jadran Lenarčič and Manfred L. Husty. Kluwer Academic Publishers, Dordrecht. (1998). 581 pages. \$254.00, NLG 470.00, GBP 160.00.

Contents:

1. Plenary. The Stewart-Gough platform of general geometry can have 40 real postures (P. Dietmaier). Parallel arrays of binary actuators (K.J. Waldron and P-H. Yang).

2. Kinematics of parallel robots. A study on the kinematics of a class of parallel manipulators (B. Siciliano). Determination of the presence of singularities in 6D workspace of a Gough parallel manipulator (J-P. Merlet). A translational 3-dof parallel manipulator (R. Di Gregorio and V. Parenti-Castelli). Inverse kinematics of a planar manipulator with holonomic higher pairs (M.J.D. Hayes and P.J. Zsombor-Murray). N -position synthesis of parallel planar RPR platforms (A.P. Murray and F. Pierrot). Dual expansion of an optimal in-parallel spherical platform device into a spatial one (M.L. Keler). Kinematics and force analysis of a 6 d.o.f. parallel mechanism with elastic joints (S. Wang, H. Hikita, N. Hanajima, M. Yamashita, Y. Zhao and Z. Huang). Inverse kinematics for an underconstrained cable suspension manipulator (T. Maier and C. Woernle). Workspace, stiffness, singularities and classification of tendon-driven Stewart platforms (R. Verhoeven, M. Hiller and S. Tadokoro).

3. Direct analysis and design of parallel robots. Workspace and assembly modes in fully-parallel manipulators: A descriptive study (Ph. Wenger and D. Chablat). The on-line direct kinematics of parallel manipulators under joint-sensor redundancy (L. Baron and J. Angeles). Forward kinematics of a 6-6 fully-parallel manipulator with congruent base and platform (C. Innocenti). Forward displacement analysis of a three-legged four-degree-of-freedom parallel manipulator (T.K. Tanev). Double circular-triangular six-degrees-of-freedom parallel robot (V. Brodsky, D. Glozman and M. Shoham). A new parallel mechanism to use for cutting convex glass panels (J. Hesselbach, N. Plitea, M. Frindt and A. Kusiek). Geometric modelling of general parallel mechanisms for calibration purposes (A.B. Lintott and G.R. Dunlop).

4. Control and design. On the mass center of articulated chains (B. Espiau). A spatial algebra approach to kinematic control of dual-arm systems (W. Wróblewski and F. Caccavale). Automatic generation of error models of the kinematics of robots (M. Vincze, S. Spiess, M. Götz and G. Ziechen). SamoS: A Pythagorean solution for omni-directional underwater vehicles (F. Pierrot, M. Benoit, P. Dauchez). Predicting the slop of in-series/parallel manipulators caused by joint clearances (C.R. Tischler, A.E. Samuel). Kinematics of a split-equator symmetrically actuated double pointing system used in a robotic wrist (J.M. Wiitala and M.M. Stanišić). An analytical design of telescopic manipulator arms with prescribed workspace (M. Ceccarelli). Modular kinematics of planar mechanisms with prismatic pairs and flexible links (P. Fanghella).

5. Basic kinematics, application of screw theory. Geometry in mechanics (P. Zsombor-Murray). The kinematics of Röscher polyhedra (K. Wohlhart). A remarkable overconstrained spherical motion (H. Stachel). Analytical kinematics of overconstrained 20-link 24R mechanism: Branches with one, two and three degrees of freedom (E. Peisach). An investigation of a special motion of an octahedron manipulator using screw theory (J. Duffy, C. Crane, B. Knight and J. Rooney). Linear systems of tan-screws for finite displacement of a rigid body with symmetries (I.A. Parkin). The Jacobian analysis of a parallel manipulator using reciprocal screws (L-W. Tsai). On compounding three successive finite displacement screws (J.E. Baker and I.A. Parkin). Unified kinestatics for serial, parallel and mobile robots (H. Bruyninckx and J. De Schutter).

6. Special methods in kinematic analysis. Applications of Fourier methods on the motion group in robot kinematics (A.B. Kyatkin and G.S. Chirikjian). A geometric approach to second and higher order kinematic analysis (J.P. Desai, M. Žefran and V. Kumar). Inverse kinematics of arbitrary robotic manipulators using genetic algorithms (A.A. Khwaja, M.O. Rahman and M.G. Wagner). An algorithm for solving the inverse kinematics of a 6R serial manipulator using dual quaternions and Grassmannians (P. Gervasi, V. Karakusevic, P.J. Zsombor-Murray). An algorithm for the solution of inverse kinematics problems based on an interval method (A. Castel-